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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,913	01/16/2004	Oren Eliezer	TI-35771	7083

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EXAMINER	
SINGH, RAMNANDAN P	
ART UNIT	**PAPER NUMBER**
2614	

NOTIFICATION DATE	DELIVERY MODE
02/26/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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	Application No.	Applicant(s)	
Office Action Summary	10/758,913	ELIEZER ET AL.	
	Examiner	**Art Unit**	
	Ramnandan Singh	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 November 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed Nov. 30, 2007 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: The amendment to paragraph [0007] states "frequency droop throughout the payload". The original disclosure does not support this. A similar thing holds for paragraphs {0011] and [0012].

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Objections

2. Claims 7, 12-13, 20, 22-23, 32, 34-35 are objected to because of the following informalities:

Claim 7 recites the limitation "adapted to" in line 1. In re Hutchinson, it has been held that an element 'adapted to' performing a function is not a positive limitation in any patentable sense but only requires

the ability to perform. *In re Hutchinson,* 154 F.2d 135, 138 (CCPA 1946); 69 U.S.P.Q. 138. Also see MPEP § 2111.04.

A similar thing holds for claims 12-13, 20, 22-23, 32, 34-35.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "substantially" in claim 7 is a relative term which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Further, claim 7 recites the limitation "software/hardware" in line 3. It is unclear whether the applicant is claiming "software" or "hardware" or both.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claim 24-26, 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Boerstler et al [US 6,963,629 B2].

Regarding claim 24 , Boerstler et al disclose an apparatus for estimating modulation noise in an oscillator, as shown in Fig. 1, comprising:

first means (100) for estimating frequency deviation errors of a signal output from the oscillator utilizing measurements of a phase error signal

observed within a phase locked loop in the transmitter [Fig. 1; col. 2, line 50 to col. 3, line 45];

second means (102) for comparing a plurality of phase error signal samples over a period of time (i.e. over a time window) to a threshold and generating an exception event each time a phase error signal sample exceeds the threshold, and generating a failure indication (i.e. reset) if the number of exception events (i.e. counts) exceeds a criteria and generating a pass indication otherwise (*i.e. no reset) [Fig. 4; col. 4, lines 9-37].

Further, Examiner interprets the term "in a transmitter" of the preamble as an intended use of the invention.

Regarding claim 31, Boerstler et al further disclose the apparatus, wherein lowering the threshold causes the number of exception events (i.e. counts) to increase for the same criteria and period of time and increasing the threshold causes the number of exception events to decrease for the same criteria and period of time [Figs. 2-4; col. 3, lines 19-26].

Regarding claims 25-26, Boerstler et al further disclose the apparatus, as shown in Fig. 7, for using digital or analog samples [Fig. 7; col. 1, lines 9-20].

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1, 3-6, 8, 12-14, 16-19, 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boerstler et al [US 6,963,629 B2].

Regarding claim 1 , Boerstler et al disclose a method for estimating modulation noise in an oscillator in conjunction with a phase locked loop (PLL), as shown in Fig. 1, comprising the steps of:

receiving samples of phase error samples produced by the phase locked loop; subtracting (i.e. computing a difference) the phase error from a current phase error sample to yield a phase error; generating an

exception event if the phase error exceeds a threshold; and repeating the steps of calculating, subtracting and generating over a period of time (.e. a time window) and outputting a failure indication (i.e. reset) if the number of exception events exceeds a maximum criteria and a pass indication (i.e. no reset) otherwise [Figs. 1, 2, 4, 6; col. 2, line 50 to col. 4, line 45; col. 4, line 37; col. 5, line 9 to col. 6, line 13].

Regarding the averaging of phase error samples and normalizing the phase error, Boerstler et al do not teach expressly averaging the samples and normalizing the phase error. However, the practice of averaging and normalizing samples is well-known in the art of signal processing.

Thus, although Boerstler et al do not teach expressly averaging the samples and normalizing the phase error, it would have been obvious to a person of ordinary skill in the art, at the time of the invention was made, to implement the standard practice of averaging samples to reduce measurement noise and thereafter normalizing the result to make it dimension-free for different applications.

Claim 14 is essentially similar to claim 1 and is rejected for the reasons stated above.

Regarding claim 3, Boerstler et al do not teach expressly using a threshold which is configurable. However, "the use of a configurable or variable threshold" is considered a matter of design choice to one of ordinary skill in the art.

Claims 4-6, 12-13, 16-19, 22-23 are essentially similar to claim 3 and are rejected for the reasons stated above.

Regarding claim 8, Boerstler et al further teach using filtered phase error samples for an analog PLL [col. 1, lines 14-17].

9. Claims 2 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boerstler et al as applied to claims 1 and 14 above, and further in view of Doi [US 6,603,821 B1].

Regarding claim 2, Boerstler et al do not teach expressly employing a

moving average method. However, the method of averaging using a moving average method is well-known in the art.

Doi teaches a method, wherein the step of averaging comprises the step of calculating a moving average over a plurality of phase error samples using filters 17 and 18 [Figs. 3,9; col. 2, line 35 to col. 4, line 6; col. 9, line 4 to col. 10, line 31].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to apply the method of moving averaging of Doi with Boerstler et al in order to obtain trends in phase errors [Doi; col. 7, lines 14-18].

Claim 15 is essentially similar to claim 2 and is rejected for the reasons stated above.

10. Claim 7, 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boerstler et al as applied to claims 1 and 14 above, and further in view of Adams et al [US 6,665,339 B1].

Regarding claim 7, Boerstler et al do not teach expressly using an on-chip processor .

Adams et al teach an on-chip processor to be implemented in testing software residing in an integrated on-chip processor (213) such that the need for external software and hardware is reduced [Fig. 2; col. 4, line 57 to col. 5, line 30; col. 7, lines 29-38].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teachings of Adams et al with Boerstler et al in order to use an on-chip processor that includes PLL circuit to speed up the processing [Adams et al; col. 13, lines 21-27].

Claim 20 is essentially similar to claim 7 and is rejected for the reasons stated above.

Regarding claim 21, since the combination of Boerstler et al and Adams teaches the apparatus, as shown in Fig. 1, including processor

(710), EEPROM (716) and RAM (714) [Boerstler et al; Fig. 7; col. 5, line 45, to col. 6, line 13], it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to store software including testing software in the memory in order to implement testing and other tasks subject to circuit , system and design constraints.

11. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boerstler et al as applied to claim 1 above.

Regarding claim 9, although Boerstler et al do not teach expressly the method wherein the transmitter is compliant with a Bluetooth standard, it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to comply with a Bluetooth standard in order to be competitive in a market, wherein the Bluetooth standard defines a low-cost, short rage, frequency hopping wireless LAN.

Claim 10 is essentially similar to claim 9 and is rejected for the reasons stated above.

12. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boerstler et al as applied to claim 1 above, and further in view of Fukushi [US 5,883,930].

Regarding claim 11, Boerstler et al do not teach expressly using a digital phase-locked loop.

Fukushi teaches using a digital phase-locked loop [Figs. 3-4; col. 4, line 46 to col. 7, line37].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teachings of Fukushi with Boerstler et al to use a digital phase-locked loop in order to the loop lock-in time of the PLL circuit [Fukushi; col. 9, lines 41-48].

13. Claims 27-30 and 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boerstler et al as applied to claim 24 above.

Regarding claim 32, since Boerstler et al teach the apparatus, as shown in Fig. 1, including processor (710), EEPROM (716) and RAM (714) [Fig. 7; col. 5, line 45, to col. 6, line 13], it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to store software including testing software in the memory in order to implement testing and other tasks subject to circuit , system and design constraints.

Claims 33-35, 27-30 relate to various design choices for implementation and are rejected for the reasons stated above.

Response to Arguments

14. Applicant's arguments filed on Nov 30, 2007 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramnandan Singh whose

telephone number is (571) 272-7529. The examiner can normally be reached on M-TH (8:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on (571) 272-7547. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ramnandan Singh
Primary Examiner
Art Unit 2614